

IN THE CLAIMS

1. (Currently Amended) A recombinant antibody derived from the murine 14 F7 monoclonal antibody produced by the hybridoma with the deposit ECACC 98101901, ~~characterized by comprising~~ the sequences of the hyper variable regions (CDRs) of the heavy and light chains ~~shown below~~, ~~comprising~~:

HEAVY CHAIN

CDR1: SYWIH

CDR2: YIDPATAYTESNQKFKD

CDR3: ESPRLRRGIYYYAMDY

LIGHT CHAIN

CDR1: RASQSIDNNLH

CDR2: YASQSID

CDR3: QQSQRWPLT.

2. (Currently Amended) The antibody ~~according to~~ ~~of~~ claim 1, ~~characterized by~~ ~~being~~ ~~comprising~~ a chimeric variant of the 14F7 antibody containing the CDRs and the framework regions (FRs) of the heavy and light chains of said 14F7 antibody and the constant region of the IgG1 human heavy chain and the constant region of the Ck human light chain with the following sequences of the framework regions (FRs) of the heavy and light chains:

HEAVY CHAIN

FR1: QVQLQQSGNELAKPGASMKMSRASGYSFT

FR2: WLKQRPDQGLEWIG

FR3: KAILTADRSSNTAFMYLNSLTSEDSAVYYCAR

FR4: WGQGTTTVSS

LIGHT CHAIN

FR1: DLVLTQSPATLSVTPGDSVSFSC

FR2: WYQQRTHESPRLLIK

FR3: GIPSRFSGSGSGTDFTLSIISVETEDFGMYFC

FR4: FGAGTKLELKRA.

3. (Currently Amended) ~~An~~ The antibody according to claims 1 and 2 of claim 1, said recombinant antibody comprising characterized by being a humanized variant of the 14F7 monoclonal antibody containing point mutations in the framework regions (FRs) of the heavy and light chains to reduce its immunogenicity.

4. (Currently Amended) ~~An~~ The antibody according to of claim 3, said recombinant antibody comprising characterized by being a humanized variant of the 14F7 monoclonal antibody whose framework regions of the heavy and light chains contain any of at least one mutation selected from the following mutations:

HEAVY CHAIN:

Position 5: Q for V

Position 9: N for A

Position 11: L for V

Position 12: A for V

Position 18: M for V

Position 19: K for R

Position 20: M for V

Position 40: R for A

Position 42: D for G

LIGHT CHAIN:

Position 39: R for K

Position 40: T for P

Position 41: H for G

Position 42: E for Q.

5. (Currently Amended) The single Single chain Fv fragment derived from the murine 14F7 monoclonal antibody produced by the hybridoma with the deposit number ECACC 98101901, characterized by containing comprising the sequence of the variable region of the heavy chain of the murine 14F7 monoclonal antibody and a variable region of the light chain of a murine antibody.

6. (Currently Amended) The single Single chain Fv fragment according to of claim 5, characterized because wherein the variable region of the light chain is the 14 F7 antibody itself.

7. (Currently Amended) The single Single chain Fv fragment according to of claim 6, characterized because wherein the sequences of the hyper variable regions (CDRs) of the heavy and light chains are the ones shown below: comprise

HEAVY CHAIN

CDR1: SYWIH

CDR2: YIDPATAYTESNQKFKD

CDR3: ESPRLRRGIYYYAMDY, and

LIGHT CHAIN

CDR1: RASQSIDNNLH

CDR2: YASQSID

CDR3: QQSNRWPLT,

8. (Currently Amended) The single Single chain Fv fragment according to of claim 7, characterized by containing wherein the CDRs and the framework regions (FRs) of the heavy and light chains of said 14F7 antibody whose sequences of the framework regions (FRs) of the heavy and light chains are the following: comprise,



HEAVY CHAIN

FR1: QVQLQQSGNELAKPGASMKMSCRASGYSFT

FR2: WLKQRPDQGLEWIG

FR3: KAILTADRSSNTAFMYLNSLTSEDSAVYYCAR

FR4: WGQGTTVTVSS

LIGHT CHAIN

FR1: DLVLTQSPATLSVTPGDSVSFSC

FR2: WYQQRTHESPRLLIK

FR3: GIPSRFGSGSGTDFTLSIISVETEDFGMYFC

FR4: FGAGTKLELKRA  

9. (Currently Amended) The single Single chain Fv fragment according to of claim 8, ~~which contains~~ further comprising the point mutations of the framework regions (FRs) of the heavy and light chains to reduce its immunogenicity.

10. (Currently Amended) The single Single chain Fv fragment according to of claim 9, ~~whose~~ wherein the framework regions of the heavy and light chains comprise at lease mutation selected from ~~contain any of the following mutations:~~

HEAVY CHAIN:

Position 5: Q for V

Position 9: N for A

Position 11:L for V

Position 12:A for R

Position 18:M for V

Position 19:K for R

Position 20:M for V

Position 40:R for A

Position 42:D for G

LIGHT CHAIN:

Position 39:R for K

Position 40:T for P

Position 41:H for G

Position 42:E for Q

11. (Currently Amended) The single Single chain Fv fragment derived from the murine 14F7 monoclonal antibody produced by the hybridoma with deposit number ECACC 98101901 according to of claim 5, characterized by containingfurther comprising the sequence of the variable region of the heavy chain of the 14F7 monoclonal antibody and a light chain variable region whose sequence is as follows:

Fr1

D I V M F Q S P A S L A V S L G Q R A T I S C

CDR 1

R A S Q S V S S S S Y S Y M H

Fr 2

W Y Q Q K P G Q P P K L L I K

CDR 2

Y A S N L E S

Fr 3

G V P A R F S G S G S G T D F T L N I H P V E E E D A A T Y Y C

CDR 3

Q H S R D V P L T F

Fr 4

G A G T K L E I K

12. (Currently Amended) The single Single chain Fv fragment derived from the murine 14F7 monoclonal antibody produced by the hybridoma with deposit number ECACC 98101901 according to of claim 5, characterized by containing further comprising the sequence of the variable region of the heavy chain of the murine 14F7 monoclonal antibody and a light chain variable region whose sequence is the following:

Fr1

D I Q M T Q T P S S L S A S L G D R V T I S C

CDR 1

R A S Q D I S N Y L N

Fr 2

W Y Q Q K P D G T V K L L I V

CDR 2

Y T S R L H S

Fr 3

G V P S R F S G S G S G T D Y S L T I S N L E Q E D I A T Y F C

CDR 3

Q Q G N T L P P T F

Fr 4

G A G T K L E L K

13. (Currently Amended) A single Single chain Fv fragment derived from the murine 14F7 monoclonal antibody produced by the hybridoma with deposit number ECACC 98101901 ~~characterized by containing~~comprising the sequence of the variable region of the heavy chain of the murine 14F7 monoclonal antibody and a light chain variable region of a human antibody

14. (Currently Amended) The single Single chain Fv fragment according to of claim 13, ~~characterized by containing~~wherein the sequence of the variable region of the heavy chain of the murine 14F7 monoclonal antibody and a light chain variable region whose sequence is the following:

Fr1

D I Q M T Q T P S S L S A S V G D R V T I T C

CDR 1

R A S Q S I S S F L N

Fr 2

W Y Q Q K P G K A P K L L I Y

CDR 2

A A S N L Q S

Fr 3

G V P S R F S G R G S G T D F T L T I S S L Q P E D F A A Y Y C

CDR 3

Q Q G Y T T P L T F

Fr 4

G Q G T K L E L K.

15. (Currently Amended) The single Single chain Fv fragment according to of claim 13, characterized by containing wherein the sequence of the variable region of the heavy chain of the murine 14F7 monoclonal antibody and a light chain variable region whose sequence is the following:

Fr1

Q S V V T Q P P S A S G G P G Q S L T I S C

CDR 1

T G T S S D V G G Y N H V S

Fr 2

W Y Q Q H P G K A P K L M I Y

CDR 2

D V S K R P S

Fr 3

G V P H R F S G S K S G N T A S L T V S G L Q A E D E A V Y Y C

CDR 3

S S Y A G S N N L V F

Fr 4

G G G T K V T V L.

16. (Currently Amended) The single Single chain Fv fragment according to of claim 13, characterized by containing the sequence of the variable region of the heavy chain of the murine 14F7 monoclonal antibody and a light chain variable region whose sequence is the following:

Fr1

S S E L T Q D P A V S V A L G Q T V R I T C

CDR 1

Q G D S L R S Y Y A S

Fr 2

W Y Q Q K P G Q A P V L V I Y

CDR 2

G K N N R P S

Fr 3

G I P D R F S G S S S G N T A S L T I T G A Q A E D E A D Y Y C

CDR 3

N S R D S S G N H V V F

Fr 4

G G G T K L T V L

17. (Currently Amended) A cell Cell line characterized by expressing comprising the expression of the recombinant antibody of any of the claims 1 to 4 claim 1.

18. (Currently Amended) A cell Cell line characterized by comprising the expression of the single chain Fv fragment of any of the claims from 5 to 16 claim 5.

19. (Currently Amended) A pharmaceutical Pharmaceutical composition for the treatment of malignant tumors characterized by comprising the recombinant antibody of any of the claims from 1 to 4 claim 1.

20. (Currently Amended) A pharmaceutical Pharmaceutical composition for the treatment of malignant tumors characterized by comprising the single chain Fv fragment of any of the claims from claim 5 to 16, and further comprising an appropriate excipient.

21. (Currently Amended) A use Use of the pharmaceutical composition of claim 19, for the comprising treatment of malignant breast tumors and melanomas and their metastases and recurrences.

22. (Currently Amended) A use Use of the pharmaceutical composition of claim 20, for comprising the treatment of malignant breast tumors and melanomas and their metastases and recurrences.

23. (Currently Amended) A reagent Reagent for the “in vivo” in vivo localization and identification of malignant tumors characterized by comprising the recombinant antibody of any of the claims from 1 to 4 claim 1, and further comprising an appropriate marker.

24. (Currently Amended) A reagent Reagent according to of claim 23, characterized for being used comprising use for the “in vivo” in vivo localization

and identification of malignant breast tumors and melanomas their metastases and recurrences.

25. (Currently Amended) A reagent Reagent for the “in vivo” in vivo localization and identification of malignant tumors characterized by comprising the single chain Fv fragment of any of the claims from 5 to claim 16, and further comprising an appropriate marker.

26. (Currently Amended) A reagent Reagent according to claim 25, characterized for being used comprising use for the “in vivo” in vivo localization and identification of malignant breast tumors and melanomas their metastases and recurrences.